

Application number 09/893,584
Response to office action dated March 15, 2006

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

(1-27) Cancelled

28. (New) A method of policing a plurality of K traffic classes of a service, K exceeding two, said method comprising:

classifying said K traffic classes as traffic-class 1 to traffic-class K;

verifying conformance of packets of traffic-class 1 to a first pre-assigned guaranteed service rate;

determining a cumulative guaranteed service-rate for traffic-class j, $2 \leq j \leq K$, as the sum of said first pre-assigned guaranteed service rate and pre-assigned guaranteed service rates for each of traffic-classes 2 to j; and

establishing conformance of packets of traffic-class j, $2 \leq j \leq K$, taken in combination with said conforming class-1 packets and cumulative conforming packets of traffic-class 2 to traffic-class (j-1), to said cumulative guaranteed service rate.

29. (New) The method of claim 28 wherein said verifying is based on a leaky-bucket mechanism associated with said traffic-class 1 and said establishing is based on a leaky-bucket mechanism associated with said traffic-class j.

30. (New) The method of claim 28 wherein said establishing comprises a step of generating policing units at a rate reflective of said cumulative guaranteed service rate.

31. (New) The method of claim 28 comprising further steps of:

marking individual packets of traffic-class 1, which packets collectively conform to said first predefined guaranteed service rate, as conforming class-1 packets; and

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marking individual packets of traffic-class j , $2 \leq j \leq K$, which packets in combination with said conforming class-1 packets and cumulative conforming packets of traffic-class 2 to traffic-class $(j-1)$ collectively conform to said cumulative guaranteed service rate, as conforming class- j packets.

32. (New) The method of claim 28 comprising further steps of:

marking a packet of traffic-class 1, which packet results in exceeding said first predefined guaranteed service rate, as a non-conforming class-1 packet; and

marking packets of traffic-class j , $2 \leq j \leq K$, which packets in combination with said conforming class 1 packets and said cumulative conforming packets of traffic-class 2 to traffic-class $(j-1)$ results in exceeding said cumulative guaranteed service rate as non-conforming class- j packets.

33. (New) The method of claim 28 wherein K equals four and said packet-sub-flows correspond to:

a class of expedited-forwarding differentiated-service specified by the Internet Engineering Task Force;

a class of assured-forwarding-1 service specified by the Internet Engineering Task Force;

a class of assured-forwarding-2 service specified by the Internet Engineering Task Force; and

a class of best-effort service.

34. (New) The method of claim 28 wherein said classifying reflects a predetermined priority order.

35. (New) A processing-platform having stored thereon executable instructions which when executed:

classifies K traffic classes of a service as traffic-class 1 to traffic-class K , K exceeding two;

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associates a pre-assigned guaranteed service rate with each of said K traffic classes;

determines a cumulative guaranteed service-rate for traffic-class j, $1 \leq j \leq K$, as the sum of said pre-assigned guaranteed service rate associated with each of traffic class 1 to traffic-class j;

identifies conforming packets of traffic-class 1 according to said pre-assigned guaranteed service rate associated with traffic-class 1; and

identifies conforming packets of traffic-class-j according to said cumulative guaranteed service-rate and conforming packets of each traffic-class k, where k is less than j.

36. (New) The processing-platform of claim 35 having further executable instructions which when executed:

identifies a packet of traffic-class j which packet results in exceeding said cumulative service rate as a non-conforming packet; and

marks said violating packet as a non-confirming packet.

37. (New) An apparatus for policing a plurality of traffic classes of a service, said apparatus comprising:

a first policer for marking each packet of a first traffic class from among said plurality of traffic classes according to conformance of said each packet to a first pre-assigned guaranteed service rate; and

a plurality of successive policers each said successive policer provided for a specific traffic class from among said plurality of traffic classes for marking every packet of said specific traffic class according to conformance of said every packet, taken in combination with other packets of said specific traffic class and certain packets of preceding traffic classes, to an aggregate service rate.

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38. (New) The apparatus of claim 37 wherein said aggregate service rate comprises said first-pre-assigned guaranteed service rate and a guaranteed service rate pre-assigned to each of said preceding traffic classes.

39. (New) The apparatus of claim 38 further comprising a leaky-bucket mechanism associated with said first policer and a leaky-bucket mechanism associated with each of said successive policers.

40. (New) The apparatus of claim 39 wherein said conformance of said each packet is determined by means of said leaky-bucket mechanism associated with said first policer and said conformance of said every packet is determined by means of said leaky-bucket mechanism associated with said each of said successive policers.

41. (New) The apparatus of claim 40 wherein said certain packets of said preceding traffic classes are packets determined to be conforming to said guaranteed service rate pre-assigned to each of said preceding traffic classes.

42. (New) An apparatus for metering packets of a plurality of traffic classes of a service, said traffic classes arranged in a predetermined order, said apparatus comprising a plurality of policers having a one-to-one correspondence to said traffic classes, a first policer of said plurality of policers being assigned a policer service rate equal to a pre-assigned service rate of a first traffic class of said plurality of traffic classes, and each succeeding policer assigned a respective policer service rate determined as a sum of a pre-assigned service rate of a corresponding traffic class and a policer service rate of a preceding policer, wherein:

said first policer meters traffic comprising all packets of said first traffic class to produce an output of said first policer comprising at least one conforming packet; and

said each succeeding policer meters aggregate traffic comprising all packets of said corresponding traffic class and conforming packets at output of said preceding policer to produce an output of said each succeeding policer comprising conforming packets.

43. The apparatus of claim 42 wherein said output of said each succeeding policer includes nonconforming packets marked accordingly.